by-exchange basis.[33] This approach is contrary to the Telecom Act of 1996 because it would impose regulatory oversight at a micro-level at a time when the emphasis is on decreased regulation in response to increased competition. It also appears to assume that LECs will not install advanced types of loop plant that can provide high capacity services. Furthermore, the carriers do not have cost data on an exchange basis. Such data would not be meaningful in an incentive regulation plan where rates are not set on strictly cost parameters.

The mechanics of the proposal are unclear, but the intent appears to be to ensure that costs per loop allocated to the regulated services annually decrease. This may be an insupportable goal, since the carriers' loop costs have not decreased each year, but have shown variation due to changes in accounting as well as in investment levels.[34] Nor is there any basis for assuming *a priori* that the loop costs will decline on an annual basis when jointly used for regulated services and nonregulated offerings such as video programming.

C. Pole Attachment Issues

Regarding pole attachments and conduits, new Section 224(g) requires utilities to "impute to their costs" of providing telecommunications and cable services an amount equal to the pole attachment rate for which the utility would be liable under Section 224.[35]

USTA believes that this new section does not require changes to the cost allocation treatment of pole attachments, conduits, ducts, or rights-of-way. Indeed, new Section 224(g),

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33/ *Notice* at ¶ 36.

34/ By way of example, over the last five years Pacific Bell's loop costs varied from $177-$188 (per Universal Service Fund ("USF") data).

35/ 47 U.S.C. § 224(g).

while somewhat unclear, should be interpreted as addressing imputation of rates for pole attachments, conduits, ducts and rights-of-way in a pricing context, rather than for cost allocation purposes. Current Part 64 treatment of the relevant costs is reasonable and need not be altered.

V. CONCLUSION

For the reasons discussed herein, USTA respectfully urges the Commission to adopt a flexible approach cost allocation as described above. Such action will best serve the public interest by creating the proper economic signals.

Respectfully submitted,

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May 31, 1996

BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION

Allocation of Costs Associated with Local Exchange Carrier Provision of Video Programming Services	CC Dkt. No. 96-112

AFFIDAVIT OF J. GREGORY SIDAK

J. Gregory Sidak, being duly sworn, deposes and says:

1. My name is J. Gregory Sidak. I am the F K. Weyerhaeuser Fellow in Law and Economics at the American Enterprise Institute for Public Policy Research (AEI), where I direct AEI's Studies in Telecommunications Deregulation. I am also a senior lecturer at the Yale School of Management, where I teach a course on telecommunications regulation with Professor Paul W. MacAvoy. I served as Deputy General Counsel of the Federal Communications Commission from 1987 to 1989, and as Senior Counsel and Economist to the Council of Economic Advisers in the Executive Office of the President from 1986 to 1987.

2. My academic research concerns telecommunications regulation, antitrust policy, and constitutional law issues concerning economic regulation. I have published three books concerning pricing, costing, competition, and investment in regulated network industries: *Toward Competition in Local Telephony* (MIT Press & AEI Press 1994), co-authored with William J. Baumol; *Transmission Pricing and Stranded Costs in the Electric Power Industry* (AEI Press 1995), also co-authored with William J. Baumol; and *Protecting Competition from the Postal Monopoly* (AEI Press 1996), co-authored with Daniel F. Spulber. I am also the author of *Foreign Investment in American*

Telecommunications, forthcoming in 1997 from the University of Chicago Press, and of scholarly articles in the *Journal of Political Economy*, *California Law Review*, *Columbia Law Review*, *Cornell Law Review*, *Duke Law Journal*, *Georgetown Law Journal*, *Harvard Journal on Law & Public Policy*, *New York University Law Review*, *Northwestern University Law Review*, *Southern California Law Review*, *Yale Journal on Regulation*, and elsewhere. Several of my writings address cost allocation and cross-subsidization, both generally and in the specific context of local exchange carrier (LEC) provision of broadband services.[1] I have testified before the U.S. Senate and House of Representatives, and my writings have been cited by the Supreme Court, by the lower federal courts, by state and federal regulatory commissions, and by the Judicial Committee of the Privy Council of the House of Lords. I have been a consultant on regulatory and antitrust matters to the Antitrust Division of the U.S. Department of Justice, to the Canadian Competition Bureau, and to companies in the telecommunications, electric power, natural gas, mail delivery, and computer software industries in North America, Europe, Asia, and Australia.

3. I received A.B. and A.M. degrees in economics and a J.D. from Stanford University, where I was a member of the *Stanford Law Review*, and I served as a law clerk to Judge Richard A. Posner during his first term on the U.S. Court of Appeals for the Seventh Circuit.

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[1] *E.g.*, WILLIAM J. BAUMOL & J. GREGORY SIDAK, TOWARD COMPETITION IN LOCAL TELEPHONY (MIT Press & AEI Press 1994); WILLIAM J. BAUMOL & J. GREGORY SIDAK, TRANSMISSION PRICING AND STRANDED COSTS IN THE ELECTRIC POWER INDUSTRY ch. 5 (AEI Press 1995) ("The Fallacy of Full Cost Allocation"); J. GREGORY SIDAK & DANIEL F. SPULBER, PROTECTING COMPETITION FROM THE POSTAL MONOPOLY 101–46 (AEI Press 1996) (discussing problems associated with cost allocation for the U.S. Postal Service); Robert W. Crandall & J. Gregory Sidak, *Competition and Regulatory Policies for Interactive Broadband Networks*, 68 S. CAL. L. REV. 1203 (1995); J. Gregory Sidak, *Telecommunications in Jericho*, 81 CAL. L. REV. 1209 (1993).

INTRODUCTION

4. I have been asked by the United States Telephone Association to evaluate whether the public interest would be served by changes in the Part 64 rules as they affect "cost allocation rules and procedures to accommodate an incumbent local exchange carrier's use of the same network facilities to provide video programming service and other competitive offerings not subject to Title II regulation, as well as telephony and other Title II offerings."[2] As the Commission notes, however, the policy implications and precedential impact of this proceeding will be far broader than would be suggested by that formulation of the immediate question under consideration:

> While much of the focus of this proceeding is on provision of video programming service by incumbent local exchange carriers, we note that this is likely to be only the first major competitive service that will be provided jointly with regulated telephone service . . . . [I]n the short term, video services will account for the majority of non-Title II use of the network facilities of incumbent local exchange carriers. We anticipate that in the long term, however, that a panoply of broadband-based, nonregulated services will share facilities with regulated services. We seek comment on whether and how the procedures established in this proceeding should be applied to incumbent local exchange carrier provision of video programming services and other competitive offerings by those companies.[3]

Mindful of those larger implications, I will cast my analysis in terms of LEC provision of "interactive broadband services"—by which I mean not only the video programming services immediately under consideration, but also the other current and future broadband services to which the Commission's notice alludes.

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[2] Allocation of Costs Associated with Local Exchange Carrier Provision of Video Programming Services, Notice of Proposed Rulemaking, CC Dkt. No. 66-112 ¶ 2 (released May 10, 1996) [hereafter *Notice*]. For purposes of my analysis, I use "the public interest" and "consumer welfare" interchangeably. *See* BAUMOL & SIDAK, TOWARD COMPETITION IN LOCAL TELEPHONY, *supra* note 1, at 26.

[3] *Notice* ¶ 2.

5. I reach four principal conclusions. First, the goals that the Commission enunciates for its proposed rewrite of the Part 64 cost allocation rules are flawed, will reduce consumer welfare, and *a fortiori* are demonstrably inferior in their effect on the public interest than is an alternative statement of goals presented here that comports with the Communications Act, as amended. Second, Part 64 is unnecessary for LECs regulated under price caps that do not include earnings-sharing arrangements. Third, for rate-of-return regulated LECs, and for LECs subject to price caps that do include earnings-sharing arrangements, competition in local telephony is now, or shortly will be, sufficient on its own to preclude cross-subsidization of LEC provision of broadband services. It is unlikely that cost allocation regulation is now, nor should it be, the binding constraint on the behavior of the LECs. Fourth, because demand and supply conditions for LEC provision of broadband services are highly uncertain and heterogeneous, it would be naive to suppose that the Commission could improve consumer welfare by mandating today nationwide, standardized cost pools and allocation factors for all LECs to follow when providing diverse broadband services in the years to come.

I. The Optimal Consumer Welfare Calculus for Cost Allocation Rules

6. As expressed in paragraph 24 of the notice, the Commission's stated goal in this proceeding is "to establish a system of cost allocation principles that inhibits carriers from imposing on ratepayers the costs and risks of competitive, nonregulated ventures, including nonregulated video service ventures."[4] In the agency's view, "such a system of cost allocation principles must balance"

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[4] . *Notice* ¶ 24.

four subsidiary goals: (1) "administrative simplicity," (2) "adaptability to evolving technologies," (3) "uniform application among incumbent local exchange carriers, in particular those that must file their cost allocation manuals with the Commission," and (4) "consistency with economic principles of cost-causation."[5] Those objectives quickly break down. The fourth subsidiary goal merely restates the usual purpose of any cost allocation system.[6] The second and third subsidiary goals are in conflict because new technologies will encourage diverse network architectures that will defy the Commission's quest for uniformity. By a process of elimination, the Commission's only justification for its cost allocation proposals is the self-serving pursuit of "administrative simplicity."

7. The Commission presumably intends that any rule that it promulgates for the allocation of common costs associated with LEC provision of video programming services to generate social benefits. But, as paragraph 24 of the notice makes clear, the Commission has neglected to consider that any cost allocation rule unavoidably will also entail two kinds of social costs of some nontrivial magnitude. The first is the loss in allocative efficiency if the rule either fails to deter actual instances of cost misallocation by LECs that reduce the well-being of consumers or the competitive process, or deters innocent or procompetitive behavior that is incorrectly identified as having received an improper cross-subsidy from the LEC's regulated activities. Those two situations embody the costs of regulatory error. Distinct from such error costs is the second category of social costs that consists of the administrative costs borne by private firms and the Commission. Those costs include the expense of lawyers, accountants, and the cost reporting systems necessary

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[5] *Id.*

[6] *See, e.g.*, CHARLES T. HORNGREN, GEORGE FOSTER & SRIKANT M. DATAR, COST ACCOUNTING: A MANAGERIAL EMPHASIS 500 (Prentice Hall 8th ed. 1994).

to comply with the rule.[7]

8. From the perspective of maximizing consumer welfare, the optimal cost-allocation rule is not the one that produces the fewest failures by the Commission to detect actual cases of cost misallocation. An outright ban on LEC entry into unregulated markets could achieve that objective, though clearly a blanket ban of that sort would foreclose any of the potential benefits to consumers from LEC entry into unregulated markets and would directly conflict with the Telecommunications Act of 1996. Nor is the optimal cost-allocation rule the one that minimizes the regulator's administrative costs. If a particular cost-allocation rule were to stifle efficient, procompetitive entry by LECs into video programming services, then it would be no consolation to consumers that the rule required few of the Commission's resources to administer. The claimed savings would be a false economy indeed.

9. In contrast to either of the two approaches described above, the optimal cost-allocation rule should minimize the sum of the harms to consumer welfare from the two kinds of possible errors and the administrative costs of the rule. That principle is simply a variant on the argument, familiar in antitrust policy, that a liability rule should minimize the combined costs of false positives (type I errors), false negatives (type II errors), and the costs of administration.[8]

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[7] . Separation of Costs of Regulated Telephone Service from Cost of Nonregulated Activities, Report and Order, CC Dkt. No. 86-111, 2 F.C.C. Rcd. 1298 (1987) (*Joint Cost Order*), *modified on recon.*, 2 F.C.C. Rcd. 6283 (1987) (*Joint Cost Reconsideration Order*), *modified on further recon.*, 3 F.C.C. Rcd. 6701 (1988) (*Joint Cost Further Reconsideration Order*), *aff'd sub nom.* Southwestern Bell Corp. v. FCC, 896 F.2d 1378 (D.C. Cir. 1990).

[8] . *See* Paul L. Joskow & Alvin K. Klevorick, *A Framework for Analyzing Predatory Pricing Policy*, 89 YALE L.J. 213, 223 (1979); *see also* Frank H. Easterbrook, *Predatory Strategies and Counterstrategies*, 48 U. CHI. L. REV. 263, 318–19 (1981); Richard C. Schmalensee, *On the Use of Economic Models in Antitrust: The* ReaLemon *Case*, 127 U. PA. L. REV. 994, 1018–19 n.98 (1979); J. Gregory Sidak, *Debunking Predatory Innovation*, 83 COLUM. L. REV. 1121, 1144–45 (1983). These scholars in law and economics in turn borrowed the construct of type I and type II errors from hypothesis testing in statistics. *See, e.g.*, PAUL G. HOEL, INTRODUCTION TO MATHEMATICAL STATISTICS 108–09 (John Wiley & Sons, Inc. 4th ed. 1971).

Eminent economists such as Kenneth J. Arrow, William J. Baumol, and Paul W. MacAvoy have extended that economic reasoning to the optimal design of telecommunications regulation.[9] In other words, from an economic perspective the optimal rule for allocating common costs associated with LEC provision of broadband services should minimize the combined social cost of three variables: (1) costs that arise when competitively neutral or efficiency-enhancing behavior by the LECs is deterred or mischaracterized as injurious to consumers; (2) costs that arise when conduct injurious to consumers is not recognized as such; and (3) the costs to the Commission and private parties of administering the cost allocation rule and resolving disputes that it engenders. Thus, if the probability and costs of failing to recognize injurious behavior are small, as is surely the case for many LECs, then there is no point in having the Commission and the courts splitting hairs over conduct that is highly unlikely to reduce consumer welfare. As the Second Circuit observed during antitrust litigation concerning the former Bell System, "Especially when the costs of a misjudgment are high and the prevalence of the conduct the law seeks to deter is low, simpler rules are preferable."[10]

10. It is especially important for the Commission to follow that strand of economic and legal reasoning in its design of the rule—if there is to be any rule at all—under Part 64 for allocating common costs associated with LEC provision of video programming services. Cost allocation is by

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[9] . BAUMOL & SIDAK, TOWARD COMPETITION IN LOCAL TELEPHONY, *supra* note 1, at 131–32; PAUL W. MACAVOY, THE FAILURE OF ANTITRUST AND REGULATION TO ESTABLISH COMPETITION IN MARKETS FOR LONG-DISTANCE TELEPHONE SERVICES ch. 6 (MIT Press & AEI Press, forthcoming 1996); Kenneth J. Arrow, Dennis W. Carlton & Hal S. Sider, *The Competitive Effects of Line-of-business Restrictions in Telecommunications*, 16 MANAGERIAL & DECISION ECON. 301, 305 (1995) ("The goal of public policy in telecommunications should not be simply to minimize potential regulatory problems but instead to maximize net benefits to society."); Sidak *Telecommunications in Jericho*, *supra* note 1, at 1216–17.

[10] . Northeastern Tel. Co. v. American Tel. & Tel. Co., 651 F.2d 76, 88 (2d Cir. 1981), *cert. denied*, 455 U.S. 943 (1982).

nature inherently malleable and contentious. The problem has nagged economists for decades,[11] and has reared its head again in regulatory proceedings involving LEC provision of broadband services—a development which Dr. Robert Crandall and Professor Leonard Waverman lament in their newly published book:

> There is perhaps no better example of the inability to learn from history than the current disputes over the proper apportionment of fixed and common costs. We appear to be preparing to replay the futile search in the 1960s and 1970s for methods to apportion AT&T's fixed and common costs, an exercise that ended in failure. It is essential that alternative regulatory schemes be developed to avoid this fruitless exercise.[12]

As is well known in the economics literature, between the ceiling of stand-alone cost (SAC) and the floor of long-run incremental cost (LRIC), an infinite range of cost-allocation outcomes is possible.

11. Economics offers a theoretically "correct" allocation of common costs for a multiproduct firm. It is Ramsey pricing. But it has been the road not chosen by regulators, for any one of a number of reasons: It requires large amounts of current data concerning demand elasticities, or it prescribes higher relative markups on the politically sensitive "captive" customers, or it is susceptible to misinterpretation in the presence of statutory barriers to entry.[13] Despite those limitations, Ramsey pricing has clearly influenced regulatory policy, as Professor William J. Baumol and I have previously noted:

> [R]egulators have accepted the usefulness of Ramsey theory as a source of

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[11] . *See, e.g.*, Ronald R. Braeutigam, *Optimal Policies for Natural Monopolies*, *in* 2 HANDBOOK OF INDUSTRIAL ORGANIZATION 1289, 1313 (Richard Schmalensee & Robert D. Willig eds., North-Holland 1989) (citing J.M. CLARK, STUDIES IN THE ECONOMICS OF OVERHEAD COSTS (University of Chicago Press 1923); A.C. PIGOU, THE ECONOMICS OF WELFARE (MacMillan 1920); F.W. Taussig, *Railway Rates and Joint Costs*, 27 Q.J. ECON. 692 (1913)); Hugo Nurnberg, *Joint Products and By-products*, *in* HANDBOOK OF COST ACCOUNTING 18-1 (Sidney Davidson & Roman L. Weil eds., Prentice Hall 1978).

[12] . ROBERT W. CRANDALL & LEONARD WAVERMAN, TALK IS CHEAP: THE PROMISE OF REGULATORY REFORM IN NORTH AMERICAN TELECOMMUNICATIONS 258–59 (Brookings Institution 1996).

[13] . BAUMOL & SIDAK, TOWARD COMPETITION IN LOCAL TELEPHONY, *supra* note 1, at 35–42.

> general qualitative guidance rather than as a generator of precise and definitive prescriptions for pricing. Ramsey theory has, for example, been used to defend the legitimacy in terms of the general welfare of what in the regulatory arena is called "differential pricing"—that is, the use of discriminatory prices, in the economic rather than the legal sense. After all, the Ramsey formula is a prescription for deriving those prices whose deviations from marginal costs will serve the public interest where scale economies are present. But such differentiated price-marginal cost deviations are precisely what economists mean by the term "price discrimination." Ramsey theory has also been used to reject high markups on costs in the prices of goods whose demands are highly elastic, and to note that the self-interest of firms will normally lead them to avoid that sort of pricing behavior, in the understanding that charging high prices for goods whose demands are elastic is a sure way to lose one's customers. In sum, Ramsey-pricing analysis continues to play a significant role in regulation, and one that may become more substantial in the future. But that role is nevertheless circumscribed, and Ramsey analysis is unlikely to determine the actual magnitudes of regulated prices.[14]

Thus, despite its various shortcomings, Ramsey pricing and the logic motivating it must be a necessary reference point for the Commission in this proceeding, where the agency seeks to rewrite Part 64 because "[o]ur current cost allocation rules were not designed for this task" of ushering local telephony through the metamorphosis from regulation to competition.

12. The notice in this proceeding, however, does not even contain the word "Ramsey." To the contrary, the Commission's closest reference to Ramsey pricing principles comes when the agency tentatively concludes, without any careful analysis of economic or statutory construction, that using demand elasticities to allocate common costs would violate the 1996 legislation:

> A fixed factor approach for non-traffic sensitive loop plant presumes that a cost-causative allocation is not possible. When a cost-causative method is not available, the allocation must be based on other considerations such as demand or public policy considerations. Demand for telephone service is at present highly inelastic. Thus, without either regulatory intervention or workable competition, incumbent local exchange carriers have the ability to shift to telephone ratepayers a large portion of

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[14] . *Id.* at 39 (citing National Rural Telecom Ass'n v. FCC, 988 F.2d 174, 182–83 (D.C. Cir. 1993) (Williams, J.); Policy and Rules Concerning Rates for Dominant Carriers, Further Notice of Proposed Rulemaking, CC Dkt. No. 87-313, 3 F.C.C. Rcd. 3195, 3257-58 ¶¶ 111–15 (1988); Coal Rate Guidelines, Nationwide, 1 I.C.C.2d 520, 526–27 (1985)).

> the cost of facilities used for both regulated and nonregulated activities. Such a result is contrary to the 1996 Act's requirement that ratepayers of regulated service not bear the costs or risks of competitive ventures and, therefore, would be an unacceptable result. For this reason we tentatively conclude that relative demand cannot form the basis for allocating common loop costs between regulated and nonregulated services.[15]

The Commission's hasty conclusions about Ramsey pricing are misplaced for three reasons. First, Congress decided in 1996 to give the telecommunications industry a competitive market structure, and competitive multiproduct firms allocate common costs in inverse relationship to the demand elasticities of their respective products, much like Ramsey pricing. Consequently, the Commission goes too far in tentatively concluding that demand cannot provide the basis for allocating common costs; at most, an apparent conflict justifying public comment exists between the prohibition on cross-subsidization contained in section 254(k)[16] and the other provisions in the 1996 legislation that remove barriers to video programming services provided by common carriers. Second, the overwhelming message that the Commission's notice projects, intentionally or not, is that technological change and the uncertainty of consumer demand for broadband services together will make Part 64 so complex in the near future as to be unworkable. Given those trends, the Commission's resort to demand-based methods for allocating common costs is inevitable. Third, if the Part 64 process is indeed bound to become intractable, and if the Commission continues to resist the use of Ramsey pricing, then it follows *a fortiori* that the agency should invoke its forbearance authority to confine the application of Part 64 to the very slim category of cases where the

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[15] *Notice* ¶ 41.

[16] "A telecommunications carrier may not use services that are not competitive to subsidize services that are subject to competition. The Commission, with respect to interstate services, and the States, with respect to intrastate services, shall establish any necessary cost allocation rules, accounting safeguards, and guidelines to ensure that services included in the definition of universal service bear no more than a reasonable share of the joint and common costs of facilities used to provide those services." 47 U.S.C. § 254(k).

probability of, and magnitude of harm to consumers from, incorrect allocation of common costs are both large.

13. The alternative chosen over Ramsey pricing, in general and in the specific cost allocation provisions of Part 64, is fully distributed cost (FDC). Unfortunately, the distinguishing feature of FDC pricing is that the allocation of common costs is done without reference to any economically meaningful criteria. In a frequently cited article criticizing FDC pricing, Professor Baumol and others wrote:

> The "reasonableness" of the basis of allocation selected makes absolutely no difference except to the success of the advocates of the figures in deluding others (and perhaps themselves) about the defensibility of the numbers. There just can be no excuse for continued use of such an essentially random, or, rather, fully manipulable calculation process as a basis for vital economic decisions by regulators.[17]

There are other problems with FDC pricing as well. As Professor Ronald Braeutigam has observed, the practice "may involve circular reasoning since prices, revenues or output levels are used to determine the allocators which are used in turn to set prices."[18] Moreover, he continues, "FDC pricing will lead to prices which are in general economically inefficient, which is not surprising given the fact that the practice focuses heavily on cost and little on conditions of demand (including demand elasticities) which are important in determining the size of the deadweight losses from any pricing policy."[19]

14. Another problem with FDC pricing is its questionable suitability for its intended

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[17] . William J. Baumol, Michael F. Koehn & Robert D. Willig, *How Arbitrary is "Arbitrary"? -or, Toward the Deserved Demise of Full Cost Allocation*, 21 PUB. UTIL. FORTNIGHTLY, Sept. 3, 1987, at 16; *accord*, BAUMOL & SIDAK, TRANSMISSION PRICING AND STRANDED COSTS IN THE ELECTRIC POWER INDUSTRY, *supra* note 1, at 55-64.

[18] . Braeutigam, *supra* note 11, at 1314.

[19] . *Id.*

task—namely, the prevention of cross-subsidies from regulated to unregulated activities. Professors Sanford Berg and John Tschirhart argue that under FDC "attempts to detect cross-subsidization become meaningless."[20] They elaborate:

> The key in detecting cross-subsidization is to have a useful definition of the cost of producing an output . . . . [C]ross-subsidization occurs when the total revenue generated by one output does not cover the total marginal cost of producing that output. Therefore, the consumers of the output must be receiving subsidies from consumers of other outputs if the firm is financially viable. An important problem with cross-subsidies is that they invite entry from other firms into the market where the subsidies are being collected . . . .
>
> The point is that a proper definition of cross-subsidies, based on marginal cost, will signal a firm or regulator about the possibilities for entry. However, when [allocators for common costs based on relative output, attributable cost, or gross revenue] are used in the definition of cross-subsidies, the signal is meaningless.[21]

Professors Berg and Tschirhart note that, if each output generates enough revenue to cover its attributed cost, "then the FCC may claim that there are no cross-subsidies."[22] But, because the allocators for common costs "are chosen arbitrarily," they will not have "any bearing, other than by chance, on market conditions and threats of entry."[23]

15. Despite its conspicuous warts, cost allocation based on FDC remains firmly rooted in regulatory practice. Therefore, if the Commission is committed in this proceeding to retaining the FDC approach in Part 64, then it should at least engage in damage control. Consistent with its forbearance authority under the Telecommunications Act of 1996,[24] the Commission should not apply Part 64 to situations in which the consumer welfare calculus set forth above would produce

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[20] . SANFORD V. BERG & JOHN TSCHIRHART, NATURAL MONOPOLY REGULATION: PRINCIPLES AND PRACTICE 94 (Cambridge University Press 1988).

[21] . *Id.*

[22] . *Id.*

[23] . *Id.*

[24] . 47 U.S.C. § 160.

a net loss. I will consider now the prime candidate for the Commission's exercise of its discretion to forbear from regulation under Part 64.

II. PRICE-CAP REGULATION WITHOUT EARNINGS-SHARING OBVIATES THE COST ALLOCATION PROVISIONS OF PART 64

16. The Part 64 cost allocation rules seek to deter the misallocation of costs by incumbent LECs from unregulated activities to regulated local exchange activities. One way to reduce the incentive and opportunity for anticompetitive cross-subsidization is to replace cost-of-service regulation with price caps.[25] When a rate-regulated monopolist enters a competitive market, there is a risk that it will underprice its rivals by attributing some of the costs of producing the competitive product to its rate-regulated activities, passing the misallocated cost along to its captive rate payers. The overallocation of common costs to the regulated activity is merely one version of that familiar story. The potential for cost misallocation reflects the asymmetry of information between the regulated firm and its regulator: The regulator has imperfect information about the firm's true costs and the appropriate allocation of common fixed costs among regulated and unregulated operations; thus, the regulator is at a disadvantage when seeking to link the firm's profits on regulated operations to its cost of service. That concern about cross-subsidization has been a recurrent concern whenever LECs propose to enter other lines of business.[26] The concern, however, is not grounds for making a LEC subject to price cap regulation without sharing comply with the burdensome cost allocation

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[25] . *See* DAVID E.M. SAPPINGTON & DENNIS WEISMAN, DESIGNING INCENTIVE REGULATION IN THE TELECOMMUNICATIONS INDUSTRY ch. 3 (MIT Press & AEI Press 1996); David E.M. Sappington, *Revisiting the Line-of-business Restrictions*, 16 MANAGERIAL & DECISION ECON. 291, 293-96 (1995).

[26] . The cross-subsidization concern was embodied most dramatically in the line-of-business restrictions imposed on the regional Bell operating companies by the Modification of Final Judgment, which Congress has since chosen to remove under the conditions contained in the Telecommunications Act of 1996.

provisions of Part 64 when it develops interactive broadband networks. Pure price cap regulation removes any incentive or opportunity for the LEC to misallocate costs.[27]

17. Price caps build on a virtue that derives from the phenomenon of regulatory lag--that is, the general delay in the responses of regulators to changes in cost or market conditions. The pertinent delay here is the regulator's time lag in adjusting permitted prices to changes in costs. Suppose that the firm's prices are set on the basis of current costs, and the firm succeeds in reducing those costs substantially. Suppose further that, say, two years elapse before regulators require the firm to cut its prices correspondingly. Then the firm will enjoy two years of superior profits as its reward for improved efficiency. That process mimics a competitive market, where a cost-cutting innovator enjoys superior but temporary profits. Those higher profits end when rivals introduce their own cost-reducing innovations, wiping out the competitive advantage temporarily enjoyed by the earlier innovator. The built-in regulatory lag at the heart of the price-cap approach must be substantial, because otherwise firms will have no effective incentive to undertake the heavy costs and risks of innovation, and society will be the loser. On the other hand, the lag, like the life of a patent, must not be infinite, lest the consuming public be forced to forgo the benefits of lower prices that the competitive market normally transmits to it.

18. Price caps eliminate the incentive for the LEC to cross-subsidize new lines of business through the misallocation of costs, for the firm may charge up to its maximum price *whether or not its accounting costs for the regulated service change.* In that manner, price caps sever

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[27] . An analogous situation exists with respect to small carriers that set their rates on the basis of average schedules determined by the National Exchange Carrier Association. *See* MTS and WATS Market Structure: Average Schedule Companies, Memorandum Opinion and Order, 6 F.C.C. Rcd. 6608 (1991). For any of those carriers, access compensation is determined on the basis of national averages, not the given carrier's own costs. Consequently, that carrier could not benefit from shifting costs from its unregulated activities to its regulated activities.

the link that rate-of-return regulation creates between the regulated firm's realized production costs and its allowed earnings. Under rate-of-return regulation, the firm could raise its allowed earnings if it were able to demonstrate additional costs incurred in the production of regulated services. Under price-cap regulation, however, the firm is not allowed higher revenues from regulated services when the costs of those activities rise. That inability to profit from demonstrating higher costs correspondingly reduces the firm's incentive to attempt cross-subsidization.

19. Furthermore, an industry productivity factor used in the development of the price-cap index will adjust the LEC's regulated prices downward to reflect any economies of scope. An additional exogenous decrease for the same economies of scope is not necessary. Indeed, it would be harmful to consumer welfare because it would result in a disincentive to invest in jointly used networks.

20. Earnings-sharing arrangements reimpose, though in lesser degree, the cost-plus characteristics of rate-of-return regulation. Above a specified rate of return, the LEC is obliged to share its profits with customers; in return, the LEC typically has greater assurance that it will be allowed a specified minimum rate of return.[28] Additional analysis, to which I shall now turn, is necessary before the Commission can determine whether or not it would likely improve consumer welfare by forbearing from applying Part 64 to LECs subject to that particular version of incentive regulation.

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[28] . *See* Sappington, *supra* note 25, at 294–95.

III. FOR LECs SUBJECT TO PRICE CAPS WITH EARNINGS-SHARING, AND FOR LECs SUBJECT TO RATE-OF-RETURN REGULATION, COMPETITION PRECLUDES CROSS-SUBSIDIZATION OF UNREGULATED BROADBAND SERVICES.

21. Compared to regulation, competition in formerly sheltered markets is surely the more efficacious constraint on the ability of LECs to cross-subsidize their construction and operation of interactive broadband services. Cross-subsidization requires that the LEC have a set of captive customers who contribute positive revenues to the firm. If some customer services are subsidized by regulatory fiat, those services cannot be providing the LEC incremental profits that can be used to subsidize customers of interactive broadband services; that will be true even if, as one would expect, the LEC has a 100 percent market share for the provision of such services.

22. The question then becomes: To what extent can the LEC subsidize interactive broadband services by raising the price of those services that contribute positive incremental profit to the LEC? Business customers have an expanding range of alternatives to voice and data services traditionally provided by the LECs. Competitive local telephony for business customers (and even many residential customers) is already well underway in the United Kingdom, where foreign telephone and cable television companies have build cable telephony networks, and in New Zealand. Time Warner offers local exchange service in Rochester, New York City, and Ohio;[29] and MCI and Sprint (with its cable partners' ownership of Teleport) have each announced plans to offer local exchange service in the suburbs of Chicago.[30] The most graphic illustration to date of the competitive threat that the interexchange carriers pose for the LEC's came with AT&T's announcement on May

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[29] . Edmund L. Andrews, *Ameritech Forcefully Stays Home*, N.Y. TIMES, Nov. 22, 1994, § D, at 1; Edmund L. Andrews, *Nynex Faces Yet Another Competitor*, N.Y. TIMES, Nov. 10, 1994, § D, at 1.

[30] . Edmund L. Andrews, *Ameritech Forcefully Stays Home*, N.Y. TIMES, Nov. 22, 1994, § D, at 1; Richard Ringer, *MCI Submits Local Phone Service Plan*, N.Y. TIMES, Aug. 18, 1994, § D, at 3.

29, 1996 that it will offer Illinois customers three months of free, unlimited local tolls calls.[31] Of course, the passage of the Telecommunications Act of 1996 will simply accelerate that pace of competitive entry through myriad provisions, including the preemption of state barriers to entry.[32] An in-depth assessment of the extent of competitive entry into local exchange markets in one major state, California, can be found in a report that Michael J. Doane, Daniel F. Spulber, and I filed on May 16, 1996 in the Commission's interconnection proceeding.[33]

23. Other potential alternatives to services supplied by the LECs include competitive access providers (CAPs), local-area networks (LANs) and metropolitan-area networks (MANs), basic exchange telecommunications radio service (BETRS), wireless wide-area networks (WANs), and very small aperture satellite networks (VSAT).[34] Advances in telecommunications equipment also facilitate substitution away from the LEC's network, the most obvious example being the substitution by customers of private branch exchange (PBX) equipment for the LEC's Centrex service.[35] Similarly, the development of affordable high-speed cable modems may encourage the migration of data traffic from local telephone networks to cable television systems even before

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[31] . John J. Keller, *AT&T Discounts Signal a National Price War*, WALL ST. J., May 30, 1996, at B1.

[32] . "No State or local statute or regulation, or other State or local legal requirement, may prohibit or have the effect of prohibiting the ability of any entity to provide any interstate or intrastate telecommunications service." 47 U.S.C. § 253(a).

[33] . Michael J. Doane, J. Gregory Sidak & Daniel F. Spulber, An Empirical Analysis of the Efficient Component-Pricing Rule and Sections 251 and 252 of the Telecommunications Act of 1996 (May 16, 1996), filed as Attachment 4 to Comments of GTE Service Corp., Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, Notice of Proposed Rulemaking, CC Dkt. No. 96-98 (released Apr. 19, 1996). The report uses data filed before the California Public Utilities Commission to provide an empirical assessment of the state of competition in local exchange telephony shortly before Congress enacted the Telecommunications Act of 1996. That snapshot view shows that the current level of actual and imminent entry into California's local telecommunications markets is substantial. The interconnection, unbundling, and resale provisions of the new legislation can be expected to accelerate that pace of entry.

[34] . GEORGE CALHOUN, WIRELESS ACCESS AND THE LOCAL TELEPHONE NETWORK (Artech House 1992).

[35] . *See* ROBERT W. CRANDALL, AFTER THE BREAKUP: U.S. TELECOMMUNICATIONS IN A MORE COMPETITIVE ERA 92–93 (Brookings Institution 1991); PETER W. HUBER, MICHAEL K. KELLOGG & JOHN THORNE, THE GEODESIC NETWORK II: 1993 REPORT ON COMPETITION IN THE TELEPHONE INDUSTRY 6.2, 6.45 (Geodesic Co. 1992).

interactive broadband networks are introduced.[36]

24. Although it is difficult to evaluate how quickly those competitive developments will render cross-subsidization by the LECs impossible, even Dr. Leland Johnson, a telecommunications economist who has long argued that the LECs might cross-subsidize their provision of video services, observes that "evolving market pressures are reducing the ability of LECs to cross-subsidize."[37] "The threat of cross-subsidization," he reasons, "is constrained because the pool of potential LEC monopoly revenues available to absorb cost shifting is shrinking."[38] That reasoning will apply even more conclusively by the time that interactive broadband networks become operational. "The threat of cross-subsidy is less today than previously," Dr. Johnson concluded in 1994, "and it will continue to diminish."[39]

IV. THE COMMISSION SHOULD AVOID "TOMORROWLAND."

25. The economic implications of technological advances in electronics, fiber optics, digital signal compression, and software will allow some networks to deliver not only narrowband

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[36] . *See* Larry J. Yokell, *Cable TV Moves into Telecom Markets*, BUSINESS COMMUNICATIONS, Nov. 1994, at 43 ("A number of vendors are developing cable modems that will deliver 64 kbps to 10 Mbps."); Russell Shaw, *Business Gets Wired for Cable--Cable Systems Offer Corporate Users High-Speed Data Transmission*, INFORMATION WEEK, Nov. 21, 1994, at 80; Carol Wilson, *Cable Operators Rebound with New Strategies*, TELEPHONY, May 30, 1994, at 10. The prospect of high-speed cable modems is significant as well for household consumption of interactive broadband services because a significant percentage of cable subscribers are also owners of personal computers:

> Currently, [in the United States] 32 million homes (31%) have PCS. In comparison, the number of homes that are passed by cable is three times that, and the number of cable subscribers is almost twice as high. Perhaps most importantly, in urban markets, two-thirds of cable subscribers have a home-based PC, enabling PC-based communications systems to take advantage of high-bandwidth coaxial cable needed for computer-based interactive applications

HANCOCK INSTITUTIONAL EQUITY SERVICES, INVESTING IN THE "EMERGING" TELECOMMUNICATIONS INDUSTRY 8 (Dec. 2, 1994).

[37] . LELAND L. JOHNSON, TOWARD COMPETITION IN CABLE TELEVISION 80 (MIT Press & AEI Press 1994).

[38] . *Id.*

[39] . *Id.* at 81.

services, but also one-way and switched broadband services. The development of new uses for the network will in turn encourage entry by a number of potential competitors for voice telephony, data transmission, distributive video (what is currently regarded as broadcasting or cable television), interactive video, and other electronic services such as banking, shopping, and advertising.[40] No one, including the Commission's experts, currently knows which system or systems will be technologically and financially viable in the foreseeable future. Although the business press regularly reports that a "convergence" of telecommunications technologies is occurring, it may be more accurate to say that a *divergence* of such technologies is occurring in the sense that a number of alternative architectures simultaneously may evolve for the delivery of various combinations of narrowband and interactive broadband services. A corollary of that analysis is that one may not assume that a system that is viable in 1996 will not be superseded by a superior technology introduced only a few years later. Consequently, the Commission's policy in this arena must proceed cautiously, lest it impede the Schumpeterian process by which superior production technologies continuously vie to displace inferior ones.[41]

26. The Commission is no more able to predict the demand side of the market for broadband services than the supply side. As currently understood, the potential market for interactive broadband services includes pay-per-view movies and sporting events, home shopping, video games, interactive information services, video conferencing, distance learning, and telemedicine. As in the case of production technologies, the uncertain demand for interactive broadband services should counsel humility, not hubris: Government policy should recognize that current predictions of what

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[40] . For a fuller discussion, see Crandall & Sidak, *supra* note 1.

[41] . JOSEPH R. SCHUMPETER, CAPITALISM, SOCIALISM AND DEMOCRACY 81–86 (Harper & Row 1942).

consumers will or will not want delivered over the network may prove within a few years to be as dated as Disneyland's 1950s rendition of "Tomorrowland."[42] So also may be the new cost allocation rules proposed in this proceeding. It is doubtful that, relative to private firms, government policy makers will have superior knowledge of the interactive broadband services that consumers will ultimately demand. There will be little hard evidence of the market demand for new interactive services until firms actually build the networks and experiment with new service offerings. In that start-up environment, it is essential that policy makers allow a wide range of new network designs and new service offerings so that consumers may be afforded as wide a range of choices as possible. It will only truncate that range of choices for the Commission to impose uniform, nationwide standards for the allocation of common costs associated with LEC provision of interactive broadband services.

CONCLUSION

27. The Commission would best serve the public interest in this proceeding by exercising its new authority to forbear from applying the cost allocation provisions of Part 64 to any LEC subject to price-cap regulation that does not include earnings sharing. For rate-of-return regulated LECs, and for LECs subject to price caps that do include earnings sharing, competition in local telephony provides or shortly will provide a better check on cross-subsidization of video programming than regulation could ever hope to accomplish. Accordingly, no new rewrite of Part 64 at this late date is either necessary or appropriate for such LEC's. Finally, the unpredictability of

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[42] . The Walt Disney Company recently announced plans to refurbish Tomorrowland. *See* Marla Dickerson, *Disneyland Steps Back to Get Ahead*, L.A. TIMES, Mar. 22, 1996, at D1 ("the fundamental contradiction of Tomorrowland [is that] the future is unfolding too fast for even the vaunted Imagineers to represent it literally within the confines of a theme park").

programming services and more advanced interactive broadband services strongly counsel against the Commission's promulgation of a new regime of nationwide, standardized cost pools and allocation factors for all LECs under Part 64. The 1996 legislation rejected such central planning in favor of the dynamism of the marketplace.

* * *

I hereby swear, under penalty of perjury, that the foregoing is true and correct, to the best of my knowledge and belief.

J. Gregory Sidak

Subscribed and sworn to before me this ____ day of May, 1996.

DISTRICT OF [illegible]

Subscribed and sworn
31st day of May 96
G. Paul Smith

Notary Public

My Commission Expires [illegible]

My Commission expires: _____